REMARKS

Status of the claims

Claims 1-12 are pending. Claims 13-21 are withdrawn from further consideration as being drawn to a non-elected invention. By this amendment, claims 1, 2, 4, 6, 7, 10, and 12 have been amended, and claims 9, 11, and 13-21 have been cancelled. New claims 22-41 are added to include each sensitizing method from the original claim 1. No new matter is added.

With respect to all claim amendments and cancellations, Applicants have not dedicated or abandoned any unclaimed subject matter and moreover have not acquiesced to any rejections and/or objections made by the Patent Office. Applicants reserve the right to pursue prosecution of any presently excluded claim embodiments in future continuation and/or divisional applications.

Restriction requirement

Applicants acknowledge that the Examiner has made the restriction requirement final. Applicants acknowledge and thank the Examiner for rejoining claims 3 and 4 with the elected invention and for rejoining the non-elected species in claims 1-2 with the elected invention.

Indication of Novelty

Applicants acknowledge and thank the Examiner for his indication that the claimed method is novel.

Claims 13-21

Applicants acknowledge the Examiner's indication that claims 13-21 have been withdrawn from consideration pursuant to the restriction requirement. Applicants have canceled claims 13-21 without prejudice to applicants filing these claims in one or more continuation or divisional applications.

Objections to the Specification

In response to the Examiner's objection to the Abstract of the Disclosure, because the Abstract exceeds 150 words in length, Applicants submit a new Abstract of the Disclosure.

In response to the Examiner's objection to the disclosure for the line through the word "dog" on page 11, line 19, Applicants have amended this typographical error to remove the line from the word "dog".

In light of the above, Applicants request that the objections to the specification be withdrawn.

Claim Objections

The Examiner objects to claims 1, 4, 9, and 10, alleging informality of claims 1, 9, and 10 because they read on a non-elected invention (transgenic animal) and informality of claims 1 and 4 because they should have a comma before the conjunction "and" or "or". In response, Applicants have amended claims 1, 4, and 10 to correct the informalities and claim 9 has been cancelled. In light of the above, Applicants respectfully request that the objections to the claims be withdrawn.

Claims Rejections - 35 U.S.C. § 112, First Paragraph

Claims 1 and 2 are rejected under 35 U.S.C. §112, first paragraph, as allegedly based on a disclosure, which is not enabling. Specifically, the Examiner states that a feature, i.e., comparing the degree of allergic reaction to an extract isolated form a genetically modified plant using a specific test (e.g., skin test) to a control extract using the same test, which is taught in the specification as critical, is not recited in the claims. In addition, the Examiner states that the claimed invention contemplates using several different allergy tests and the claims only encompass a method of using a specific test (skin test) and steps for any other allergy test are incomplete and thus not enabled by the disclosure.

In response, Applicants have amended claim 1 to replace the recitation "skin reaction" with "allergic response". Claim 1 as amended recites "comparing the degree of allergic response observed with that observed by carrying out steps (a)-(c) above" with a control extract. Claim 1 as amended indicates that the same challenging and observing method are used for both the extract from a genetically modified plant and the extract from a control plant "wherein the challenging (b) and observing (c) steps are carried out in the same manner for both the first and second extracts". Therefore, Applicants submit that claims 1 and 2 are enabled by the disclosure.

In view of the above, Applicants respectfully request that the rejections to claims 1 and 2 under 35 U.S.C. §112, first paragraph be withdrawn.

Claim Rejections - 35 U.S.C. § 112, Second Paragraph

Claims 1, 2, 9, and 11 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Claim 1 is rejected as allegedly being vague and indefinite because it reads on a non-elected invention (heterologous protein produced by a transgenic animal). Applicants have amended claim 1 to delete the recitation "or animal" so this rejection is moot.

Claims 1 and 2 are rejected as allegedly being incomplete for omitting essential steps amounting to a gap between the steps. In response, claims 1 (and through its dependency) claim 2 has been amended to recite that the challenging and observing tests are carried out in the same manner for both the first and second extracts. As such, claims 1-2 are now complete.

Claim 2 is rejected as allegedly lacking antecedent basis for the recitation "the allergen material". In response, claim 2 has been amended to recite "the first extract or the second extract" to provide antecedent support.

Claim 9 is rejected as allegedly being indefinite in that it fails to point out what is included or excluded by the claim language. Without acquiescence to the rejection, claim 9 has been cancelled, which renders this rejection moot.

Claim 11 is rejected as allegedly lacking antecedent basis for the recitation "the protein" and definition for "immunoglobulin", and being unclear how claim 11 is operatively linked to the pre-amble of claim 1. Without acquiescence to the rejection, claim 11 has been cancelled, which renders the rejection moot.

In view of the above, Applicants respectfully request that the rejections to claims 1, 2, 9, and 11 under 35 U.S.C. §112, second paragraph be withdrawn.

CONCLUSION

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made**".

Applicants respectfully submit that they have addressed all issues raised by the Office and that the claims are in condition for allowance, which is respectfully requested. If the Examiner believes there are remaining issues, he is encouraged to telephone Applicants' representative at the number listed below.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **416272001500**. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

Paragraph beginning on page 11, line 19 and ending on page 11, line 26 has been replaced with the following rewritten paragraph:

-- The method employs a newborn dog of an atopic [~~dog~~] dog colony having a number of special characteristics. The dogs in the atopic colony are inbred, and are selected for a genetic predisposition to an allergy. The dogs may have a history of sensitivity to pollens or foods, and can be of a variety of breeds. Preferably, the dogs are spaniels or basenji dogs or mixed breed spaniel/basenji dogs. However, the dogs are not limited to these breeds. Once the dogs are produced, they can be bred, inbred, crossbred or outbred to produce further atopic colonies for use as dog models according to the present invention. --

In the Claims:

Claims 1, 2, 4, 6, 7, 10, and 12 are amended as follows and claims 3, 5, and 8 are reiterated:

1. (Amended) A method for testing the allergenicity of a heterologous protein produced by a plant [or animal] that has been genetically modified to produce that protein, comprising the steps of:

(a) sensitizing a newborn dog from an atopic dog colony with a first extract prepared from tissue of the genetically modified plant [or animal] and containing a mixture of plant [or animal] proteins and the heterologous protein, by [injecting, feeding or] applying the first extract to the skin of the newborn dog,

(b) after a period sufficient to allow the dog to establish an immune response to the [sensitizing] first extract, challenging the dog with the first extract,

(c) observing the degree of allergic response provoked,

(d) if a detectable [skin reaction] allergic response is observed, comparing the degree of [skin reaction] the allergic response observed with that observed by carrying out steps (a)-(c) above, but where the sensitizing step (a) or [applying] challenging step (b) is carried out with a second plant [or animal] extract containing substantially the same proteins as the first extract but lacking the heterologous protein wherein the challenging (b) and observing (c) steps are carried out in the same manner for both the first and second extracts, and

(e) if the degree of [skin reaction] the allergic response at (c) is greater than that observed by carrying out steps (a)-(c) in accordance with step (d), identifying the heterologous protein as a potential allergen in humans.

2. (Amended) The method of claim 1, wherein said challenging and observing steps are selected from the group consisting of:

(a) applying the [allergen material] first or the second extract to a skin region of the dog and observing a local wheal reaction at the application site as the allergic response (skin test);

(b) feeding the [allergen material] first or the second extract to the dog, and observing gastrointestinal upset as the allergic response (feeding test);

(c) injecting the [allergen material] first or the second extract directly with the wall of the stomach of the dog and observing a local wheal reaction at the application site as the allergic response (gastroendoscopy test);

(d) administering the [allergen material] first or the second extract by inhalation to the dog, and observing bronchial constriction as the allergic response (inhalation test); and

(e) applying the [allergen material] first or the second extract with a patch immobilized on the skin and observing inflammation at the site of application (transdermal patch test).

4. (Amended) The method of claim 3, wherein the plant is a crop plant selected from the group consisting of corn, barley, wheat, rice, peanut, sorghum, millet, spelt, and soy.

6. (Amended) The method of claim 1, wherein substantially no [skin reaction] allergic response is observed in carrying out steps (a)-(c) in step (d).

7. (Amended) The method of claim 1, wherein said first or second extract is prepared by forming a tissue powder and extracting the powder with a selected extract medium.

10. (Amended) The method of claim 8, wherein the heterologous protein is produced by the transgenic plant[or animal].

12. (Amended) The method of claim 1, wherein the degree of [skin reaction] allergic response observed in step (c), compared with that observed in step (d) is indicative of the degree of allergenicity expected in humans.

22. (New) A method for testing the allergenicity of a heterologous protein produced by a plant that has been genetically modified to produce that protein, comprising the steps of:

(a) sensitizing a newborn dog from an atopic dog colony with a first extract prepared from tissue of the genetically modified plant and containing a mixture of plant proteins and the heterologous protein, by injecting the first extract into the newborn dog,

(b) after a period sufficient to allow the dog to establish an immune response to the first extract, challenging the dog with the first extract,

(c) observing the degree of allergic response provoked,

(d) if a detectable allergic response is observed, comparing the degree of the allergic response observed with that observed by carrying out steps (a)-(c) above, but where the

sensitizing step (a) or challenging step (b) is carried out with a second plant extract containing substantially the same proteins as the first extract but lacking the heterologous protein wherein the challenging (b) and observing (c) steps are carried out in the same manner for both first and second extracts, and

(e) if the degree of the allergic response at (c) is greater than that observed by carrying out steps (a)-(c) in accordance with step (d), identifying the heterologous protein as a potential allergen in humans.

23. (New) The method of claim 22, wherein said challenging and observing steps are selected from the group consisting of:

(a) applying the first or the second extract to a skin region of the dog and observing a local wheal reaction at the application site as the allergic response (skin test);

(b) feeding the first or the second extract to the dog, and observing gastrointestinal upset as the allergic response (feeding test);

(c) injecting the first or the second extract directly with the wall of the stomach of the dog and observing a local wheal reaction at the application site as the allergic response (gastroendoscopy test);

(d) administering the first or the second extract by inhalation to the dog, and observing bronchial constriction as the allergic response (inhalation test); and

(e) applying the first or the second extract with a patch immobilized on the skin and observing inflammation at the site of application (transdermal patch test).

24. (New) The method of claim 23, wherein the extract is obtained from a transgenic plant.

25. (New) The method of claim 24, wherein the plant is a crop plant selected from the group consisting of corn, barley, wheat, rice, peanut, sorghum, millet, spelt, and soy.

26. (New) The method of claim 23, wherein step (d) is carried out by applying the first extract to a dog sensitized with said second extract.

27. (New) The method of claim 23, wherein substantially no allergic reaction is observed in carrying out steps (a)-(c) in step (d).

28. (New) The method of claim 23, wherein said first or second extract is prepared by forming a tissue powder and extracting the powder with a selected extract medium.

29. (New) The method of claim 23, which further includes, when a potential allergen is identified in step (e), repeating step (c) with the heterologous protein in purified form.

30. (New) The method of claim 29, wherein the heterologous protein is produced by a transgenic plant.

31. (New) The method of claim 23, wherein the degree of allergic response observed in step (c), compared with that observed in step (d) is indicative of the degree of allergenicity expected in humans.

32. (New) A method for testing the allergenicity of a heterologous protein produced by a plant that has been genetically modified to produce that protein, comprising the steps of:

(a) sensitizing a newborn dog from an atopic dog colony with a first extract prepared from tissue of the genetically modified plant and containing a mixture of plant proteins and the heterologous protein, by feeding the first extract to the newborn dog,

(b) after a period sufficient to allow the dog to establish an immune response to the first extract, challenging the dog with the first extract,

(c) observing the degree of allergic response provoked,

(d) if a detectable allergic response is observed, comparing the degree of the allergic response observed with that observed by carrying out steps (a)-(c) above, but where the sensitizing step (a) or challenging step (b) is carried out with a second plant extract containing substantially the same proteins as the first extract but lacking the heterologous protein wherein the challenging (b) and observing (c) steps are carried out in the same manner for both the first and second extracts, and

(e) if the degree of the allergic response at (c) is greater than that observed by carrying out steps (a)-(c) in accordance with step (d), identifying the heterologous protein as a potential allergen in humans.

33. (New) The method of claim 32, wherein said challenging and observing steps are selected from the group consisting of:

(a) applying the first or the second extract to a skin region of the dog and observing a local wheal reaction at the application site as the allergic response (skin test);

(b) feeding the first or the second extract to the dog, and observing gastrointestinal upset as the allergic response (feeding test);

(c) injecting the first or the second extract directly with the wall of the stomach of the dog and observing a local wheal reaction at the application site as the allergic response (gastroendoscopy test);

(d) administering the first or the second extract by inhalation to the dog, and observing bronchial constriction as the allergic response (inhalation test); and

(e) applying the first or the second extract with a patch immobilized on the skin and observing inflammation at the site of application (transdermal patch test).

34. (New) The method of claim 32, wherein the extract is obtained from a transgenic plant.

35. (New) The method of claim 34, wherein the plant is a crop plant selected from the group consisting of corn, barley, wheat, rice, peanut, sorghum, millet, spelt, and soy.

36. (New) The method of claim 32, wherein step (d) is carried out by applying the first extract to a dog sensitized with said second extract.

37. (New) The method of claim 32, wherein substantially no allergic reaction is observed in carrying out steps (a)-(c) in step (d).

38. (New) The method of claim 32, wherein said first or second extract is prepared by forming a tissue powder and extracting the powder with a selected extract medium.

39. (New) The method of claim 32, which further includes, when a potential allergen is identified in step (e), repeating step (c) with the heterologous protein in purified form.

40. (New) The method of claim 39, wherein the heterologous protein is produced by a transgenic plant.

41. (New) The method of claim 32, wherein the degree of allergic response observed in step (c), compared with that observed in step (d) is indicative of the degree of allergenicity expected in humans.

In the Abstract:

The abstract has been amended as follows:

ABSTRACT OF THE DISCLOSURE

A method for testing the allergenicity of a heterologous protein produced by a plant [or animal that has been] genetically modified to produce that protein [is disclosed]. The method includes the steps of: (a) sensitizing a newborn dog [from an atopic dog colony] with a first extract [prepared] from [tissue of] the genetically modified plant [or animal and] containing a mixture of plant [or animal] proteins and the heterologous protein[, by injecting or feeding the extract into the newborn dog]; (b) after a sufficient period [sufficient to allow] allowing the dog to establish an immune response to the sensitizing extract, challenging the dog with the extract; (c) observing the degree of allergic response provoked; (d) if [a detectable skin reaction] an allergic reaction is observed, comparing the degree of [skin reaction] allergic reaction observed with that observed by carrying out steps (a)-(c) above, but where the sensitizing step (a) or applying step (b) is carried out with a second plant [or animal] extract containing substantially the same proteins as the first extract but lacking the heterologous protein; and (e) if the degree of [skin reaction] allergic reaction at (c) is greater than that observed by carrying out steps (a)-(c) in accordance with step (d), identifying the heterologous protein as a potential allergen in humans. [Also disclosed is a dog for use in testing a biological substance for allergenicity in humans, and compositions useful in practicing the method.]